CLAIMS

1. A method for decreasing the tumorigenicity or malignancy of a brain cancer cell, comprising altering the expression of glycosylation of proteins produced by said cell, wherein said altered pattern of glycosylation is caused by the alteration of activity of glycosyltransferase within said cell.

2. A method of claim 1 wherein said glycosyltransferase is selected from the group consisting of α2,3-ST glycosyltransferase, α2,6-ST glycosyltransferase, HexB glycosyltransferase, Fuco glycosyltransferase, GnTIII glycosyltransferase, GnTI glycosyltransferase, SLex-ST glycosyltransferase and GnTV glycosyltransferase.

3. A method of claim 2 wherein said brain cell is a glioma cell.

4. A method of claim 2 wherein said brain cell is a meningioma cell.

5. A method of claim 3 wherein said altered activity of glycosyltransferase is caused by the inhibition of activity of a glycosyltransferase selected from the group consisting of α2,3-ST glycosyltransferase, HexB glycosyltransferase, SLex-ST glycosyltransferase and GnTIII glycosyltransferase.

6. A method of claim 4 wherein said altered activity of glycosyltransferase is caused by the inhibition of activity of a glycosyltransferase selected from the group consisting of α2,3-ST glycosyltransferase, α2,6-ST glycosyltransferase, Fuco glycosyltransferase and GnTIII glycosyltransferase.

7. A method of claim 3 wherein said altered activity of glycosyltransferase is caused by the increase of activity of a glycosyltransferase selected from the group consisting of α2,6-ST glycosyltransferase, Fuco glycosyltransferase, GnTI glycosyltransferase and GnTV glycosyltransferase.

8. A method of claim 4 wherein said altered activity of glycosyltransferase is caused by the increase of activity of a glycosyltransferase selected from the group consisting of SLex-ST glycosyltransferase and GnTV glycosyltransferase.

9. A method of claim 5 wherein said inhibition is caused by the hybridization of an anti-sense DNA specific to a target nucleic acid wherein said nucleic acid sequence is selected from the group consisting of nucleic acid sequence encoding for α2,3-ST glycosyltransferase, HexB glycosyltransferase, SLex-ST glycosyltransferase and GnTIII glycosyltransferase.

10. A method of claim 6 wherein said inhibition is caused by the hybridization of an anti-sense DNA specific to a target nucleic acid sequence wherein said nucleic acid sequence is selected from the group consisting of nucleic acid sequence encoding for α2,3-ST glycosyltransferase, α2,6-ST glycosyltransferase, Fuco glycosyltransferase and GnTIII glycosyltransferase.

11. A method of claim 7 wherein said increase in activity is caused by the stable transfection of an exogenous DNA encoding for a glycosyltransferase, expressibly linked to an inducible promoter, into said cell wherein said exogenous DNA is selected from the group consisting of nucleic acid sequence encoding for α2,6-ST glycosyltransferase, Fuco glycosyltransferase, GnTI glycosyltransferase and GnTV glycosyltransferase.

12. A method of claim 8 wherein said increase in activity is caused by the stable transfection of an exogenous DNA encoding for a glycosyltransferase, expressibly linked to an inducible promoter, into said cell wherein said exogenous DNA is selected from the group consisting of nucleic acid sequence encoding for SLex-ST glycosyltransferase and GnTV glycosyltransferase.

13. An isolated nucleic acid sequence encoding for a recombinant, replication-deficient adenovirus and a glycosyltransferase, wherein said glycosyltransferase is selected from the group consisting of α2,3-ST glycosyltransferase, α2,6-ST glycosyltransferase, HexB glycosyltransferase, Fuco glycosyltransferase, GnTIII glycosyltransferase, GnTI glycosyltransferase, SLex-ST glycosyltransferase and GnTV glycosyltransferase.

14. An recombinant adenoviral particle containing a nucleic acid encoding for a glycosyltransferase wherein said nucleic acid sequence is selected from the group consisting of nucleic acid sequence encoding for α2,3-ST glycosyltransferase, α2,6-ST glycosyltransferase, HexB glycosyltransferase, Fuco glycosyltransferase, GnTIII glycosyltransferase, GnTI glycosyltransferase, SLex-ST glycosyltransferase and GnTV glycosyltransferase.

15. An isolated nucleic acid of claim 13, wherein the expression of said glycosyltransferase gene is under transcriptional control of a regulator selected from the group consisting of CMV immediate-early enhancer/promoter, SV40 early enhancer/promoter, JC polyomavirus promoter, and chicken β-actin promoter.

16. An adenoviral particle of claim 14, wherein the expression of said nucleic acid encoding for a glycosyltransferase is under transcriptional control of a regulator selected from the group consisting of CMV immediate-early enhancer/promoter, SV40 early enhancer/promoter, JC polyomavirus promoter, and chicken β-actin promoter.

17. A method for detecting the tumorigenicity or malignancy of a brain cell, comprising measuring the expression of glycosyltransferase within said cell.

18. A method of claim 17 wherein said glycosyltransferase is selected from the group consisting of α2,3-ST glycosyltransferase, α2,6-ST glycosyltransferase, HexB

glycosyltransferase, Fuco glycosyltransferase, GnTIII glycosyltransferase, GnTI glycosyltransferase, SLex-ST glycosyltransferase and GnTV glycosyltransferase.

19. A method of claim 17 wherein said detection is accomplished by detection of nucleic acid sequences specific for glycosyltransferase.

20. A kit for determining the tumorigenicity or malignancy of a brain cell said kit comprising a panel of paired nucleic acid primers specific for the detection of the expression of specific nucleic acid sequences corresponding to specific species of glycosyltransferase, said detection using enzyme mediated nucleic acid amplification with a pair of said primers, said paired primers in said panel being specific for at least one nucleic acid sequence selected from the group of α2,3-ST glycosyltransferase, α2,6-ST glycosyltransferase, HexB glycosyltransferase, Fuco glycosyltransferase, GnTIII glycosyltransferase, GnTI glycosyltransferase, SLex-ST glycosyltransferase and GnTV glycosyltransferase.